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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/896,439	06/29/2001	Kenneth P Wilson	1082-143	8247

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EXAMINER

MUSSER, BARBARA J

ART UNIT	PAPER NUMBER
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1733

DATE MAILED: 12/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/896,439

Applicant(s)

WILSON, KENNETH P

Examiner

Barbara J. Musser

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-6 and 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art in view of Binning et al. and Lambdin Jr.(U.S. Patent 3,573,086).

The admitted prior art discloses carbonizing a viscose rayon woven mat, impregnating it with a resin, and lining the interior of a rocket nozzle with the impregnated material. However, such material is no longer available.(Specification, Pg. 1-2) The admitted prior art does not disclose carbonizing a polyaramid mat. Binning et al. discloses carbonizing a polyaramid fiber mat and impregnating them with resin.(Col. The fibrous mat can then be used for nose cones or rocket nozzle exhausts.(Col. 1, ll. 35; Col. 2, ll. 39-43) A less preferred fiber is rayon.(Col. 3, ll. 26) It would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the rayon of the admitted prior art with polyaramid since rayon is no longer available and since Binning et al. prefers polyaramid to rayon and particularly since Binning et al. discloses such material can be used in the same type of environments as applicant's. It is noted that the fibers form a flexible layer(Col. 1, ll. 28) and thus one in the art would appreciate that theses materials were intended to be used insulation.

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The references do not disclose the denier of the fibers used to form the reinforcement. Lambdin discloses that when making carbonized impregnated fiber composites for rocket nozzles from rayon, the denier of the fiber is around 2.3 denier.(Col. 1, ll. 35-40; Col. 3, ll. 30) It would have been obvious to one of ordinary skill in the art at the time the invention was made to use 2.3 denier fiber to form the reinforcement since this denier reinforcement has been used previously in carbonized impregnated fiber composites used in rocket nozzles.(Col. 1, ll. 35-40)

Regarding claims 2-6 and 13-15, the rejections are as set forth in the previous office action.

3. Claims 7-12 and 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art, Binning et al., and Lambdin Jr. as applied to claim 1 above, and further in view of Hirsch et al.(U.S. Patent 3,576,769).

The references cited above do not disclose the polyaramid being poly(m-phenyleneisophthalamide)[NOMEX] though Binning et al. does disclose the polyaramid can be a phenylene which is not ortho.(Col. 1, ll. 52-54) Hirsch et al. discloses carbonizing polyaramid to form ablative composites wherein the polyaramid can be NOMEX.(Abstract; Col. 3, ll. 9-10) It would have been obvious to one of ordinary skill in the art at the time the invention was made to use any type of polyaramid such as NOMEX as the polyaramid in the admitted prior art, Binning et al., and Lambdin, Jr. since Binning et al. discloses using polyaramids having phenylenes which are not ortho, since Binning et al. does not indicate only specific polyaramids can be used, and since

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Hirsch et al. shows that NOMEX is known in the art as a heat-resistant material.(Abstract) Absent unexpected results, this is considered obvious.

Regarding claims 8-12 and 16-18, the rejections are as set forth in the previous office action.

4. Claims 1-7 and 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Binning et al. in view of the admitted prior art and Lambdin Jr.

Binning et al. discloses carbonizing a polyaramid fiber mat and using it with resin. The mat can then be used for nose cones or rocket nozzle exhausts.(Col. 1, ll. 35; Col. 2, ll. 39-43; Col. 3, ll. 22-40) The reference does not specifically state the mat is impregnated with resin. However, it does disclose the fibers can be employed with resin.(Col. 2, ll. 41-42) The conventional way of employing resin with fibrous mats is by impregnating the fibers with the resin as shown for example by the admitted prior art which discloses carbonizing a viscose rayon woven mat, impregnating it with a resin, and lining the interior of a rocket nozzle with the impregnated material.(Specification, Pg. 1-2) It would have been obvious to one of ordinary skill in the art at the time the invention was made to impregnate the fiber mat of Binning et al. with resin since this is the conventional method of employing resin with fiber and since Binning et al. suggests the use of resin with fiber. The reference discloses the material can be used as an ablative nose cone. Therefore, one in the art would understand that the material was ablative.

The references do not disclose the denier of the fibers used to form the reinforcement. Lambdin discloses that when making carbonized impregnated fiber

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composites for rocket nozzles, the denier of the fiber is around 2.3 denier.(Col. 1, ll. 35-40; Col. 3, ll. 30) It would have been obvious to one of ordinary skill in the art at the time the invention was made to use 2.3 denier fiber to form the reinforcement since this denier reinforcement has been used previously in carbonized impregnated fiber composites used in rocket nozzles.(Col. 1, ll. 35-40)

Regarding claims 2-6 and 13-15, the rejections are as set forth in the previous office action.

5. Claims 7-12 and 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Binning et al., the admitted prior art, and Lambdin Jr. as applied to claim 1 above, and further in view of Hirsch et al.(U.S. Patent 3,576,769).

The references cited above do not disclose the polyaramid being poly(m-phenyleneisophthalamide)[NOMEX] though Binning et al. does disclose the polyaramid can be a phenylene which is not ortho.(Col. 1, ll. 52-54) Hirsch et al. discloses carbonizing polyaramid to form ablative composites wherein the polyaramid can be NOMEX.(Abstract; Col. 3, ll. 9-10) It would have been obvious to one of ordinary skill in the art at the time the invention was made to use any type of polyaramid such as NOMEX as the polyaramid in the admitted prior art, Binning et al., and Lambdin, Jr. since Binning et al. discloses using polyaramids having phenylenes which are not ortho, since Binning et al. does not indicate only specific polyaramids can be used, and since Hirsch et al. shows that NOMEX is known in the art as a heat-resistant material.(Abstract) Absent unexpected results, this is considered obvious.

Regarding claims 8-12 and 16-18, the rejections are as set forth in the previous office action.

Response to Arguments

6. Applicant's arguments filed 10/3/03 have been fully considered but they are not persuasive.

7. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, it would have been obvious to one of ordinary skill in the art at the time the invention was made to impregnate the fiber mat of Binning et al. with resin since this is the conventional method of employing resin with fiber and since Binning et al. suggests the use of resin with fiber. The reference discloses the material can be used as an ablative nose cone. Therefore, one in the art would understand that the material was ablative. It would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the rayon of the admitted prior art with polyaramid since rayon is no longer available and since Binning et al. prefers polyaramid to rayon and particularly since Binning et al. discloses such material can be used in the same type of environments as applicant's. It is noted that the fibers form a flexible layer (Col. 1, ll. 28) and thus one in

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the art would appreciate that these materials were intended to be used insulation. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use any type of polyaramid such as NOMEX as the polyaramid in the admitted prior art, Binning et al. and Lambdin Jr., or alternatively the admitted prior art, Binning et al., and Lambdin Jr., since Binning et al. discloses using polyaramids having phenylenes which are not ortho, since Binning et al. does not indicate only specific polyaramids can be used, and since Hirsch et al. shows that NOMEX is known in the art as a heat-resistant material. (Abstract) Absent unexpected results, this is considered obvious.

8. Applicant's arguments with respect to claims 1-18 have been considered but are moot in view of the new ground(s) of rejection.

Regarding applicant's argument that the references do not disclose 1.5-3.0 denier fiber, Lambdin Jr. discloses that rayon fibers used to form carbonized impregnated fiber composites for use as rocket nozzles can have denier of 2.3. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use 2.3 denier fiber to form the reinforcement since this denier reinforcement has been used previously in carbonized impregnated fiber composites used in rocket nozzles.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Barbara J. Musser** whose telephone number is (703)-305-1352 until December 20 when it changes to (571) 272-1222. The examiner can normally be reached on Monday-Thursday; alternate Fridays.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on 703-308-3853. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9310.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

BJM

BJM



JEFF H. AFTERGUT
PRIMARY EXAMINER
GROUP 1300